

REMARKS

Reconsideration of the application is respectfully requested.

I. Status of the Application

Claims 1-4 and 6-11 stand rejected.

Claim 5 was previously canceled without prejudice or disclaimer.

Claims 12 and 13 are new. No new matter is added. Support for claims 12 and 13 can be found in Paragraph [0049].

II. Telephone Interview

The Applicants thank Examiner Belousov for all of the courtesies extended to Applicants' representative Raffaele DeMarco, in the telephone interview held on September 15, 2008. The Examiner's reasoning in the Final Office Action was explained and the Wolf and Kitano references were discussed. At the conclusion of the interview, it was understood that a Request for Continued Examination would be filed, after which, the Examiner agreed to engage in further discussions with the Applicants' representative regarding the present application.

III. Rejections under 35 U.S.C. §103

The rejection of claims 1-4, 6, 9, and 10 under 35 U.S.C. §103(a) as being unpatentable over JP-2003-209286 by Kitano ("Kitano") in view of Silicon Processing for VLSI Era Volume 1 by Wolf et al. ("Wolf") is traversed.

Neither Kitano nor Wolf, either separately or combined, disclose or suggest doing what the Applicants disclose and positively recite as their invention in claim 1, that being: a substrate with a

metal film of Ag, Al, or an alloy containing said metal formed on a surface of the substrate and functioning as a reflective layer, where the thickness of the metal film is 0.5-3 μm , the crystal grains of the metal film have a particle diameter that is no more than 0.5 μm and the surface of the metal film has a center-line roughness Ra of no more than 0.1 μm . (underscoring added for emphasis). Therefore, it is our understanding that claim 1 is in condition for allowance.

Kitano and Wolf are silent as to any relationship between a high reflectivity and a grain size or roughness. As described by the Applicants, the utilization of crystal grains having a small particle diameter results in increased smoothness and reflectivity. This is because the surface shape of the metal film is influenced by the surface shape of the underlying substrate, and greater surface roughness of the substrate tends to increase unevenness of the metal film surface. As the unevenness of the metal film surface increases, the increase in roughness will cause a decrease in its reflectivity.

It is noted that it is only after the Examiner has read and fully understood what the Applicants have done that, with improper hindsight, he has attempted to combine the disclosures of Wolf with Kitano to do what the Applicants now claim as their invention. It is also noted that the combination of Wolf with Kitano would still not disclose the structure that Applicants recite in claim 1. Claims 2-4, 6, 9, and 10 depend from claim 1 and, therefore, for the reasons noted above, also are in condition for allowance.

The rejection of claims 7 and 8 under 35 U.S.C. §103(a) as being unpatentable over Kitano in view of Wolf, and further in view of US Patent Publication 2004/0026708 to Chen is traversed.

Claims 7 and 8 depend from claim 1 and, therefore, for the reasons noted above, claims 7 and 8 are also believed to be in condition for allowance.

The rejection of claim 11 under 35 U.S.C. §103(a) as being unpatentable over Kitano in view of Wolf, and further in view of US Patent Publication 2004/0004435 to Hsu is traversed. Claim 11 depends from claim 1 and, therefore, for the reasons noted above, claim 11 is also believed to be in condition for allowance.

The rejection of claims 1-4, 6, 9, and 10 under 35 U.S.C. §103(a) as being unpatentable over Wolf, in view of Kitano is traversed.

As stated above, neither Kitano nor Wolf, either separately or combined, disclose or suggest doing what the Applicants disclose and positively recite as their invention in claim 1, that being: a substrate with a metal film of Ag, Al, or an alloy containing said metal formed on a surface of the substrate and functioning as a reflective layer, where the thickness of the metal film is 0.5-3 μm , the crystal grains of the metal film have a particle diameter that is no more than 0.5 μm and the surface of the metal film has a center-line roughness Ra of no more than 0.1 μm . (underscoring added for emphasis). Therefore, it is our understanding that claim 1 is in condition for allowance.

Again, Kitano and Wolf are silent as to any relationship between a high reflectivity and a grain size or roughness. As described by the Applicants, the utilization of crystal grains having a small particle diameter results in increased smoothness and reflectivity. This is because the surface shape of the metal film is influenced by the surface shape of the underlying substrate, and greater surface roughness of the substrate tends to increase unevenness of the metal film surface. As the

unevenness of the metal film surface increases, the increase in roughness will cause a decrease in its reflectivity.

It is noted that it is only after the Examiner has read and fully understood what the Applicants have done that, with improper hindsight, he has attempted to combine the disclosures of Wolf with Kitano to do what the Applicants now claim as their invention. It is also noted that the combination of Wolf with Kitano would still not disclose the structure that Applicants recite in claim 1. Claims 2-4, 6, 9, and 10 depend from claim 1 and, therefore, for the reasons noted above, also are in condition for allowance

The rejection of claims 7 and 8 under 35 U.S.C. §103(a) as being unpatentable over Wolf in view of Kitano, and further in view of Chen is traversed. Claims 7 and 8 depend from claim 1 and, therefore, for the reasons noted above, claims 7 and 8 are also believed to be in condition for allowance.

The rejection of claim 11 under 35 U.S.C. §103(a) as being unpatentable over Wolf in view of Kitano, and further in view of Hsu is traversed. Claim 11 depends from claim 1 and, therefore, for the reasons noted above, claim 11 is also believed to be in condition for allowance.

Claims 12 and 13 were added to further describe and distinguish the substrate used in the present invention. Claims 12 depends from claim 1 and, in turn, claim 13 depends from claim 12. Thus, for at least the reasons noted above, claims 12 and 13 are also believed to be in condition for allowance.

CONCLUSION

In view of the above, each of the presently pending independent Claims 1-4 and 6-11 in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

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Respectfully submitted,

By 

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